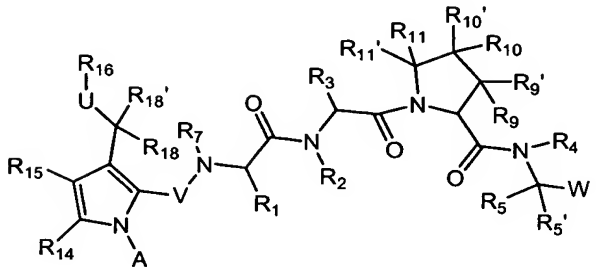
CLAIMS

We claim:

1. A compound of formula I:



I

or a pharmaceutically acceptable salt thereof,

wherein:

R_9 and $R_{9'}$ are each independently:

hydrogen-,

(C1-C12)-aliphatic-,

(C3-C10)-cycloalkyl- or -cycloalkenyl-,

[(C3-C10)-cycloalkyl or -cycloalkenyl]-(C1-C12)-aliphatic-,

(C6-C10)-aryl-,

(C6-C10)-aryl-(C1-C12)aliphatic-,

(C3-C10)-heterocyclyl-,

(C3-C10)-heterocyclyl-(C1-C12)aliphatic-,

(C5-C10)-heteroaryl-, or

(C5-C10)-heteroaryl-(C1-C12)-aliphatic-;

wherein up to three aliphatic carbon atoms in each of R_9 and $R_{9'}$ are optionally replaced by O, N, NH, S, SO, or SO_2 in a chemically stable arrangement;

wherein each of R_9 and $R_{9'}$ is independently and optionally substituted with up to 3 substituents independently selected from J;

J is halogen, -OR', $-NO_2$, -CN, $-CF_3$, $-OCF_3$, -R', oxo, thioxo, =N(R'), =N(OR'), 1,2-methylenedioxy, 1,2-ethylenedioxy, $-N(R')_2$, -SR', -SOR', $-SO_2R'$, $-SO_2N(R')_2$,

$-SO_3R'$, $-C(O)R'$, $-C(O)C(O)R'$, $-C(O)C(O)OR'$, $-C(O)C(O)N(R')_2$, $-C(O)CH_2C(O)R'$, $-C(S)R'$, $-C(S)OR'$, $-C(O)OR'$, $-OC(O)R'$, $-C(O)N(R')_2$, $-OC(O)N(R')_2$, $-C(S)N(R')_2$, $-(CH_2)_{0-2}NHC(O)R'$, $-N(R')N(R')COR'$, $-N(R')N(R')C(O)OR'$, $-N(R')N(R')CON(R')_2$, $-N(R')SO_2R'$, $-N(R')SO_2N(R')_2$, $-N(R')C(O)OR'$, $-N(R')C(O)R'$, $-N(R')C(S)R'$, $-N(R')C(O)N(R')_2$, $-N(R')C(S)N(R')_2$, $-N(COR')COR'$, $-N(OR')R'$, $-C(=NH)N(R')_2$, $-C(O)N(OR')R'$, $-C(=NOR')R'$, $-OP(O)(OR')_2$, $-P(O)(R')_2$, $-P(O)(OR')_2$, or $-P(O)(H)(OR')$; wherein;

each R' is independently selected from:

hydrogen-,

(C1-C12)-aliphatic-,

(C3-C10)-cycloalkyl- or -cycloalkenyl-,

[(C3-C10)-cycloalkyl or -cycloalkenyl]-(C1-C12)-aliphatic-,

(C6-C10)-aryl-,

(C6-C10)-aryl-(C1-C12)aliphatic-,

(C3-C10)-heterocyclyl-,

(C3-C10)-heterocyclyl-(C1-C12)aliphatic-,

(C5-C10)-heteroaryl-, and

(C5-C10)-heteroaryl-(C1-C12)-aliphatic-;

wherein up to 5 atoms in R' are optionally and independently substituted with J;

wherein two R' groups bound to the same atom optionally form a 5- to 6-membered aromatic or a 3- to 7-membered saturated or partially unsaturated ring system having up to 3 heteroatoms independently selected from N, NH, O, S, SO, and SO_2, wherein said ring is optionally fused to a (C6-C10)aryl, (C5-C10)heteroaryl, (C3-C10)cycloalkyl, or a (C3-C10)heterocyclyl, wherein any ring has up to 3 substituents selected independently from J;

R_{10}, $R_{10'}$, R_{11}, and $R_{11'}$ are each independently:

hydrogen-,
(C1-C12)-aliphatic-,
(C3-C10)-cycloalkyl- or -cycloalkenyl-,
[(C3-C10)-cycloalkyl or -cycloalkenyl]-(C1-C12)-aliphatic-,
(C6-C10)-aryl-,
(C6-C10)-aryl-(C1-C12)aliphatic-,
(C3-C10)-heterocyclyl-,
(C3-C10)-heterocyclyl-(C1-C12)aliphatic-,
(C5-C10)-heteroaryl-, or
(C5-C10)-heteroaryl-(C1-C12)-aliphatic-;

wherein any ring is optionally fused to a (C6-C10)aryl, (C5-C10)heteroaryl, (C3-C10)cycloalkyl, or (C3-C10)heterocyclyl;

wherein up to 3 aliphatic carbon atoms in each of R_{10}, $R_{10'}$, R_{11}, and $R_{11'}$ are optionally replaced by a heteroatom selected from O, NH, S, SO, or SO_2 in a chemically stable arrangement;

wherein each of R_{10}, $R_{10'}$, R_{11}, and $R_{11'}$ is independently and optionally substituted with up to 3 substituents independently selected from J; or

R_{10} is -OR' and $R_{10'}$ is H; or

R_{10} and $R_{10'}$ are both -OR' or -SR'; or

R_{10} and $R_{10'}$ are both fluorine; or

R_{10} and $R_{10'}$ are optionally taken together with the carbon atom to which they are bound to form a 5- to 7-membered saturated or partially unsaturated ring system;

wherein the R_{10} and $R_{10'}$ atoms bound to the carbon atom are independently C(H), N, NH, O, S, SO, or SO_2;

wherein said ring optionally contains up to 4 heteroatoms independently selected from N, NH, O, S, SO, and SO_2;

wherein any atom is optionally singly or multiply substituted with up to 2 substituents selected independently from J; and

wherein said ring is optionally fused to a second ring selected from (C6-C10)aryl, (C5-C10)heteroaryl, (C3-C10)cycloalkyl, and a (C3-C10)heterocyclyl, wherein said second ring has up to 3 substituents selected independently from J; or

R_9 and R_{10} are optionally taken together with the ring atoms to which they are bound to form a 5- to 6-membered aromatic or a 3- to 7-membered saturated or partially unsaturated ring system up to 3 heteroatoms independently selected from N, NH, O, S, SO, or SO_2; wherein said ring system is optionally substituted with up to 3 substituents selected independently from J; or

R_{10} and R_{11} are optionally taken together with the ring atoms to which they are bound to form a 5- to 6-membered aromatic or a 3- to 7-membered saturated or partially unsaturated ring system having up to 3 heteroatoms independently selected from N, NH, O, S, SO, or SO_2; wherein said ring is optionally substituted with up to 3 substituents selected independently from J; or

R_9 and R_{11} are optionally taken together with the ring atoms to which they are bound to form a bridged bicyclic saturated or partially unsaturated carbocyclic or heterocyclic ring system containing up to 10 atoms; wherein said ring system is optionally substituted with up to 3 substituents selected independently from J; wherein each heteroatom in the heterocyclic ring system is selected from the group consisting of N, NH, O, S, SO, or SO_2;

R_1 and R_3 are each independently:

(C1-C12)-aliphatic-,

(C3-C10)-cycloalkyl- or -cycloalkenyl-,
[(C3-C10)-cycloalkyl- or -cycloalkenyl]-(C1-C12)-aliphatic-,
(C6-C10)-aryl-(C1-C12)aliphatic-, or
(C5-C10)-heteroaryl-(C1-C12)-aliphatic-;

wherein up to 3 aliphatic carbon atoms in each of R_1 and R_3 are optionally replaced by a heteroatom selected from O, N, NH, S, SO, or SO_2 in a chemically stable arrangement;

wherein each of R_1 and R_3 is independently and optionally substituted with up to 3 substituents independently selected from J;

R_2, R_4, and R_7 are each independently:
hydrogen-,
(C1-C12)-aliphatic-,
(C3-C10)-cycloalkyl-(C1-C12)-aliphatic-, or
(C6-C10)-aryl-(C1-C12)-aliphatic-;

wherein up to two aliphatic carbon atoms in each of R_2, R_4, and R_7 are optionally replaced by a heteroatom selected from O, N, NH, S, SO, and SO_2 in a chemically stable arrangement;

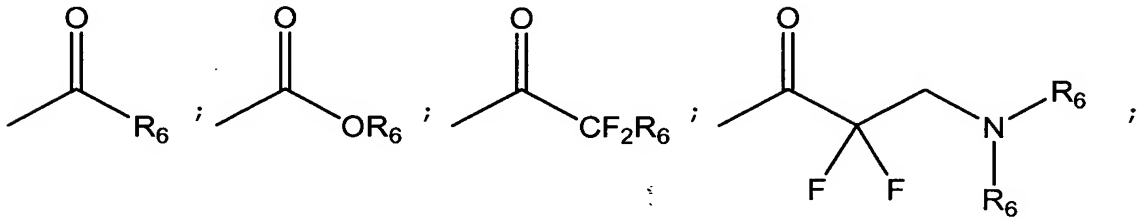
wherein each of R_2, R_4, and R_7 is optionally substituted with up to 3 substituents independently selected from J;

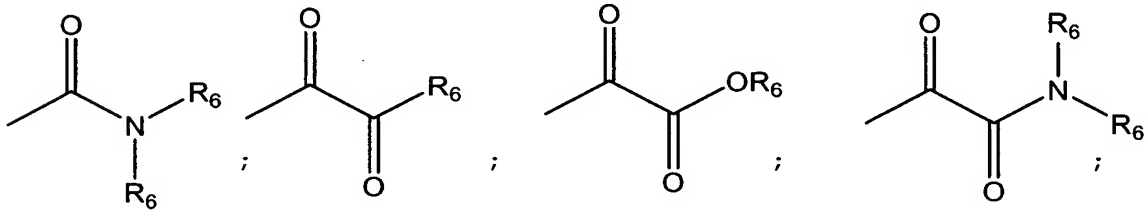
R_5 and $R_{5'}$ are each independently hydrogen or (C1-C12)-aliphatic, wherein any hydrogen is optionally replaced with halogen; wherein any terminal carbon atom of R_5 is optionally substituted with sulfhydryl or hydroxy; or R_5 is Ph or $-CH_2Ph$ and $R_{5'}$ is H, wherein said Ph or $-CH_2Ph$ group is optionally substituted with up to 3 substituents independently selected from J; or

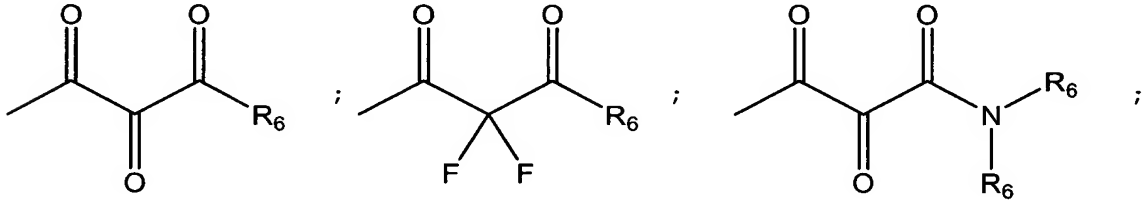
R_5 and $R_{5'}$ together with the atom to which they are bound optionally form a 3- to 6-membered saturated or partially unsaturated ring having up to 2 heteroatoms

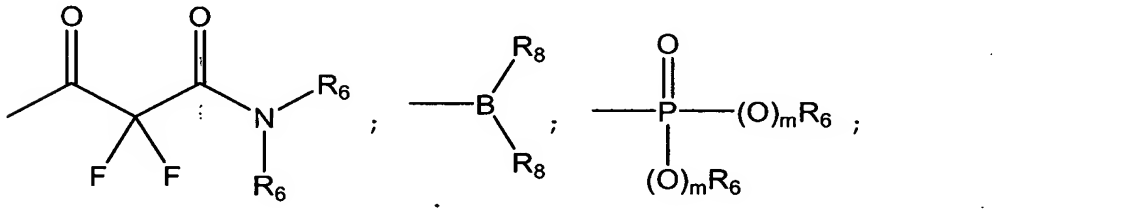
selected from N, NH, O, SO, and SO_2; wherein said ring is optionally substituted with up to 2 substituents selected independently from J;

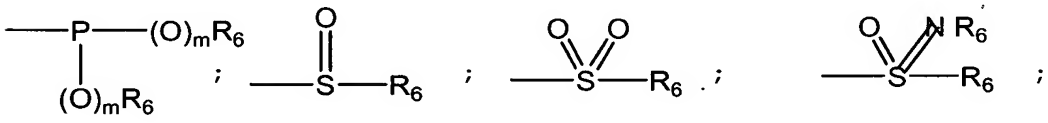
W is:

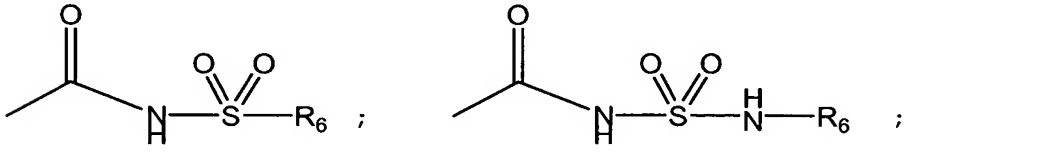












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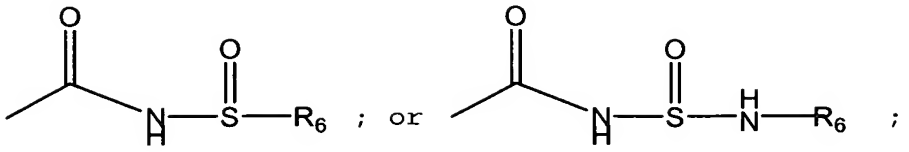


wherein m is 0 or 1;

wherein each R_6 is independently:

hydrogen-,

(C1-C12)-aliphatic-,

(C6-C10)-aryl-,

(C6-C10)-aryl-(C1-C12)aliphatic-,

(C3-C10)-cycloalkyl- or cycloalkenyl-,

[(C3-C10)-cycloalkyl- or cycloalkenyl]-(C1-C12)-aliphatic-,

(C3-C10)-heterocyclyl-,

(C3-C10)-heterocyclyl-(C1-C12)-aliphatic-,

(C5-C10)-heteroaryl-, or

(C5-C10)-heteroaryl-(C1-C12)-aliphatic-;

wherein up to 3 aliphatic carbon atoms in each R_6 is optionally replaced by a heteroatom selected from O, NH, S, SO, or SO_2 in a chemically stable arrangement;

wherein R_6 is optionally substituted with up to 3 J substituents; or

two R_6 groups, together with the nitrogen atom to which they are bound, optionally form a 5- to 6-membered aromatic or a 3- to 7-membered saturated or partially unsaturated ring system having up to 3 heteroatoms independently selected from N, NH, O, S, SO, and SO_2, wherein said ring is optionally fused to a (C6-C10)aryl, (C5-C10)heteroaryl, (C3-C10)cycloalkyl, or a (C3-C10)heterocyclyl, wherein any ring has up to 3 substituents selected independently from J;

wherein each R_8 is independently -OR'; or the R_8 groups together with the boron atom, is a (C3-C10)-membered heterocyclic ring having in addition to the

boron up to 3 additional heteroatoms selected from N, NR', O, SO, and SO_2;

V is -C(O)-, -C(S)-, -S(O)-, or $-S(O)_2-$;

A is hydrogen or $-C(R_{12})(R_{12'})-T-R_{13}$;

T is oxygen or a bond;

R_{12} and $R_{12'}$ are each independently:

hydrogen-, or

(C1-C6)-aliphatic-;

wherein up to two aliphatic carbon atoms in each of R_{12} and $R_{12'}$ are optionally replaced by a heteroatom selected from O, N, NH, S, SO, and SO_2 in a chemically stable arrangement; or

R_{12} is absent and $R_{12'}$ is =O;

R_{13} is $-C(O)R'$, $-P(O)(OR')_2$, $-SO_3R'$, -R', or R_{19};

R_{19} is:

hydrogen,

(C1-C12)-aliphatic-,

(C6-C10)-aryl-(C1-C12)aliphatic-, or

(C5-C10)-heteroaryl-(C1-C12)-aliphatic-;

wherein up to 3 aliphatic carbon atoms in each R_{19} is optionally replaced by a heteroatom selected from O, NR_{19}, S, SO, or SO_2 in a chemically stable arrangement;

wherein up to 3 aliphatic carbon atoms in each R_{19} is optionally replaced with -C(O)-;

wherein R_{19} is optionally substituted with up to 3 J substituents;

wherein any NR_{19}, taken together with the nitrogen and a carbon adjacent to the nitrogen, optionally forms a 5- to 7-membered ring system, wherein said ring system optionally contains up to three additional heteroatoms selected from O, N, NH, S, SO, and SO_2 in a chemically stable arrangement;

R_{14} and R_{15} are independently halogen, $-OR'$, $-OC(O)N(R')_2$, $-NO_2$, -CN, $-CF_3$, $-OCF_3$, -R', 1,2-methylenedioxy, 1,2-

ethylenedioxy, $-N(R')_2$, $-SR'$, $-SOR'$, $-SO_2R'$, $-SO_2N(R')_2$, $-SO_3R'$, $-C(O)R'$, $-C(O)C(O)R'$, $-C(O)CH_2C(O)R'$, $-C(S)R'$, $-C(O)OR'$, $-OC(O)R'$, $-C(O)N(R')_2$, $-OC(O)N(R')_2$, $-C(S)N(R')_2$, or $-(CH_2)_{0-2}NHC(O)R'$;

R_{16} is R', $-C(O)R'$, $-P(O)(OR')_2$, or $-SO_3R'$;

U is O, N, or a bond; and

R_{18} and $R_{18'}$ are optionally taken together with the carbon atom to which they are bound to form a 5- to 7-membered saturated or partially unsaturated ring system;

wherein the R_{18} and $R_{18'}$ atoms bound to the carbon atom are independently O or N;

wherein said ring optionally contains up to 1 additional heteroatom selected from N, NH, O, S, SO, and SO_2;

wherein any substitutable atom is optionally singly or multiply substituted with up to 2 substituents selected independently from J;

wherein said ring is optionally fused to a second ring selected from (C6-C10)aryl, (C5-C10)heteroaryl, (C3-C10)cycloalkyl, and a (C3-C10)heterocyclyl, wherein said second ring has up to 3 substituents selected independently from J;

provided that when R_{18} and $R_{18'}$ are optionally taken together with the carbon atom to which they are bound to form a 5- to 7-membered saturated or partially unsaturated ring system, then R_{16} is R'; or

$R_{18'}$ is =O, $=CH_2$, =N(R'), or =N(OR') and R_{18} is absent, provided that when R_{18} is absent and $R_{18'}$ is $=CH_2$, then U is oxygen; and

provided that when R_{18} is absent and $R_{18'}$ is =O, =N(R') or =N(OR'), then U is a bond and R_{16} is R'.

2. The compound according to claim 1, wherein V is $-C(O)-$.

3. The compound according to claim 2, wherein:

A is $-C(R_{12})(R_{12'})-T-R_{13}$;

R_{12} and $R_{12'}$ are both hydrogen;

T is oxygen;

R_{13} is $-C(O)R'$, $-P(O)(OR')_2$, $-SO_3R'$, or $-R'$;

R_{14} and R_{15} are both $-R'$;

$R_{18'}$ is $=O$ and R_{18} is absent;

U is a bond; and

R_{16} is R', wherein R' is selected from:

(C1-C12)-aliphatic-,

(C3-C10)-cycloalkyl- or -cycloalkenyl-,

[(C3-C10)-cycloalkyl or -cycloalkenyl]-(C1-C12)-aliphatic-;

wherein up to 5 atoms in R' are optionally and independently substituted with J.

4. The compound according to claim 3, wherein:

R_{13} is $-C(O)R'$, $-P(O)(OR')_2$, or $-R'$;

R_{14} and R_{15} are both $-R'$ and R' is (C1-C12)-aliphatic-; and

R_{16} is R', wherein R' is (C1-C12)-aliphatic-.

5. The compound according to claim 2, wherein:

A is $-C(R_{12})(R_{12'})-T-R_{13}$;

R_{12} is hydrogen and $R_{12'}$ is (C1-C6)-aliphatic-;

wherein up to two aliphatic carbon atoms in $R_{12'}$ are optionally replaced by a heteroatom selected from O, N, NH, S, SO, and SO_2 in a chemically stable arrangement;

T is oxygen;

R_{13} is $-C(O)R'$, $-P(O)(OR')_2$, $-SO_3R'$, or $-R'$;

R_{14} and R_{15} are both $-R'$;

$R_{18'}$ is $=O$ and R_{18} is absent;

U is a bond; and

R_{16} is R', wherein R' is selected from:

(C1-C12)-aliphatic-,

(C3-C10)-cycloalkyl- or -cycloalkenyl-,

[(C3-C10)-cycloalkyl or -cycloalkenyl]-(C1-C12)-aliphatic-;

wherein up to 5 atoms in R' are optionally and independently substituted with J.

6. The compound according to claim 5, wherein:

R_{13} is -C(O)R', -P(O)$(OR')_2$, or -R';

R_{14} and R_{15} are both -R' and R' is (C1-C12)-aliphatic-;

R_{16} is R', wherein R' is (C1-C12)-aliphatic-;

7. The compound according to claim 2, wherein:

A is -C(R_{12})($R_{12'}$)-T-R_{13};

R_{12} is absent and $R_{12'}$ is =O;

T is oxygen or a bond;

R_{13} is -R_{19};

R_{14} and R_{15} are both -R';

$R_{18'}$ is =O and R_{18} is absent;

U is a bond; and

R_{16} is R', wherein R' is selected from:

(C1-C12)-aliphatic-,

(C3-C10)-cycloalkyl- or -cycloalkenyl-,

[(C3-C10)-cycloalkyl or -cycloalkenyl]-(C1-C12)-aliphatic-;

wherein up to 5 atoms in R' are optionally and independently substituted with J.

8. The compound according to claim 2, wherein:

$R_{18'}$ is =CH_2, and R_{18} is absent;

U is oxygen;

R_{16} is R', -C(O)R', -P(O)$(OR')_2$, or -SO_3R';

R_{14} and R_{15} are both -R'; and

A is hydrogen.

9. The compound according to claim 8, wherein:
R_{16} is R', -C(O)R', or -P(O)(OR')$_2$;
R_{14} and R_{15} are both -R' and R' is (C1-C12)-aliphatic-.

10. The compound according to claim 2, wherein:
$R_{18'}$ is =N(R') or =N(OR') and R_{18} is absent;
U is a bond;
R_{16} is R';
R_{14} and R_{15} are both -R'; and
A is hydrogen.

11. The compound according to claim 10, wherein:
R_{14} and R_{15} are both -R' and R' is (C1-C12)-aliphatic-.

12. The compound according to claim 2, wherein:
R_{18} and $R_{18'}$ are optionally taken together with the carbon atom to which they are bound to form a 5- to 7-membered saturated or partially unsaturated ring system;
wherein the R_{18} and $R_{18'}$ atoms bound to the carbon atom are independently O or N;
wherein said ring optionally contains up to 1 additional heteroatom selected from N, NH, O, S, SO, and SO_2;
wherein any substitutable atom is optionally singly or multiply substituted with up to 2 substituents selected independently from J;
wherein said ring is optionally fused to a second ring selected from (C6-C10)aryl, (C5-C10)heteroaryl, (C3-C10)cycloalkyl, and a (C3-C10)heterocyclyl, wherein said second ring has up to 3 substituents selected independently from J;
U is a bond;
R_{16} is R';

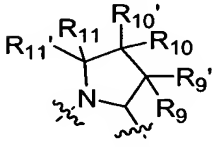
R_{14} and R_{15} are both -R'; and
A is hydrogen.

13. The compound according to claim 12;
wherein the R_{18} and $R_{18'}$ atoms bound to the carbon atom are O;
wherein said ring optionally contains up to 1 additional oxygen atom.

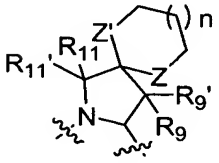
14. The compound according to any one of claims 1-13, wherein R_{14} and R_{15} are both -R' and R' is (C1-C6)-aliphatic-.

15. The compound according to claim 14, wherein R_{14} and R_{15} are both methyl.

16. The compound according to any one of claims 1-15, wherein the



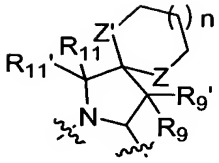
radical is:



;

wherein:
n is 0, 1, or 2;
Z and Z' are independently C(H), N, NH, O, or S;
R_9, $R_{9'}$, R_{11}, and $R_{11'}$ are as defined in claim 1; and
the spirocyclic ring containing Z and Z' is optionally substituted with up to 3 J substituents, wherein J is as defined in claim 1.

17. The compound according to claim 16, wherein:



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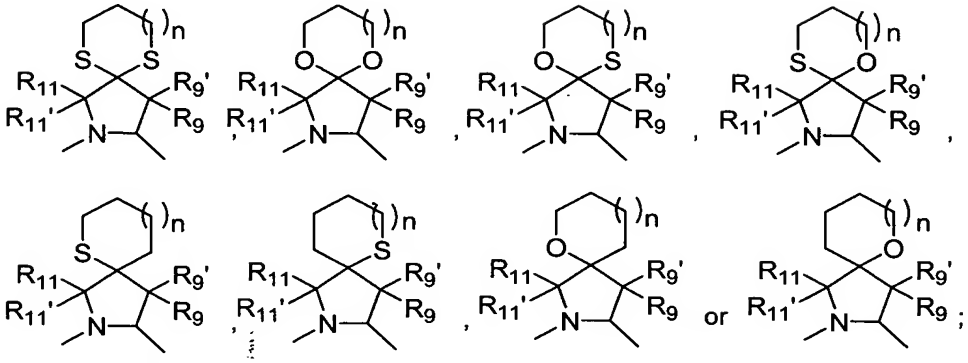


wherein:

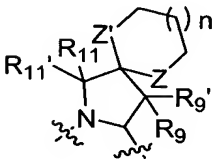
R_{11} and $R_{11'}$ are both H;

n is 0, 1, or 2;

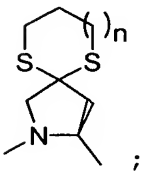
R_9 and $R_{9'}$ are as defined in claim 1; and

the spirocyclic ring containing Z and Z' is optionally substituted with up to 3 J substituents, wherein J is as defined in claim 1.

18. The compound according to claim 17, wherein the



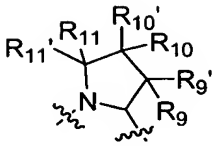
radical is:

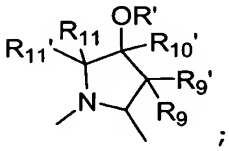


wherein:

n is 0 or 1.

19. The compound according to any one of claims 1-15, wherein the


radical is:


;

wherein:

R_9, $R_{9'}$, $R_{10'}$, R_{11}, and $R_{11'}$ are as defined in claim 1; and

R' is:

(C6-C10)-aryl-,

(C6-C10)-aryl-(C1-C12)aliphatic-,

(C3-C10)-heterocyclyl-,

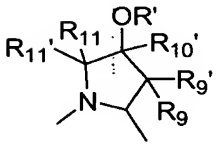
(C3-C10)-heterocyclyl-(C1-C12)aliphatic-,

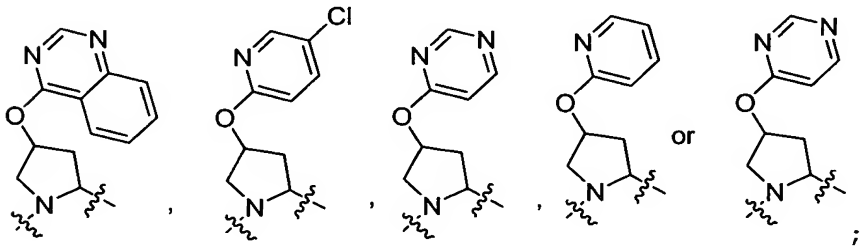
(C5-C10)-heteroaryl-, or

(C5-C10)-heteroaryl-(C1-C12)-aliphatic-;

wherein up to 5 atoms in R' are optionally and independently substituted with J.

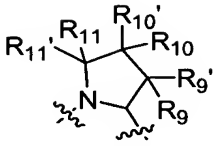
20. The compound according to claim 19, wherein the

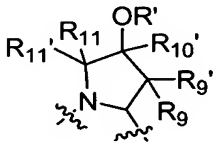

radical is:


;

wherein the R' ring is optionally substituted with up to 5 substituents independently selected from J.

21. The compound according to any one of claims 1-15, wherein the


radical is:


;

wherein:

R_9, $R_{9'}$, $R_{10'}$, R_{11}, and $R_{11'}$ are as defined in claim 1; and

R' is selected from:

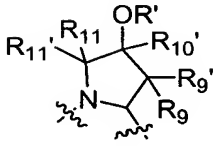
(C6-C10)-aryl-(C1-C12)aliphatic-,

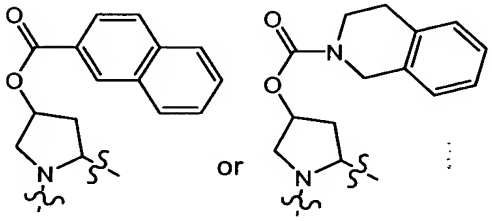
(C3-C10)-heterocyclyl-(C1-C12)aliphatic-, and

(C5-C10)-heteroaryl-(C1-C12)-aliphatic-;

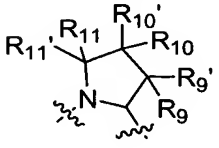
wherein up to 5 atoms in R' are optionally and independently substituted with J.

22. The compound according to claim 21, wherein the


radical is:


;

23. The compound according to any one of claims 1-15, wherein in the


radical

R_9, R_{10}, $R_{10'}$, R_{11}, and $R_{11'}$ are as defined in claim 1; and

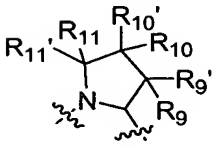
$R_{9'}$ is:

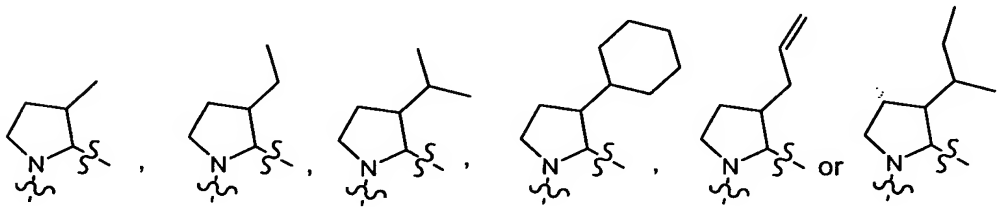
(C1-C12)-aliphatic-,

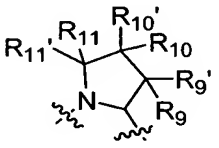
(C3-C10)-cycloalkyl- or -cycloalkenyl-;

wherein up to three aliphatic carbon atoms in $R_{9'}$ may be replaced by O, N, NH, S, SO, or SO_2; and

wherein $R_{9'}$ is independently and optionally substituted with up to 3 substituents independently selected from J.

24. The compound according to claim 23, wherein the  radical is:



25. The compound according to any one of claims 1-15, wherein in the  radical

R_9, $R_{9'}$, R_{10}, $R_{10'}$, and R_{11} are H; and

$R_{11'}$ is:

(C1-C12)-aliphatic-,

(C3-C10)-cycloalkyl- or -cycloalkenyl-,

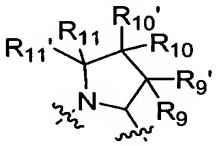
(C6-C10)-aryl-,

wherein any ring is optionally fused to a (C6-C10)aryl, (C5-C10)heteroaryl, (C3-C10)cycloalkyl, or (C3-C10)heterocyclyl;

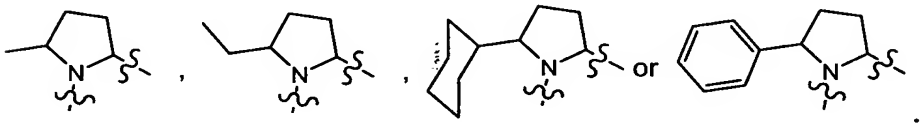
wherein up to 3 aliphatic carbon atoms in $R_{11'}$ may be replaced by a heteroatom selected from O, NH, S, SO, or SO_2 in a chemically stable arrangement;

wherein $R_{11'}$, is independently and optionally substituted with up to 3 substituents independently selected from J.

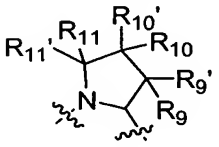
26. The compound according to claim 25, wherein the formula I, the



radical is:



27. The compound according to any one of claims 1-15, wherein in the



radical

R_9, R_{10}, R_{11}, and $R_{11'}$ are H; and

R_9, and $R_{10'}$ are:

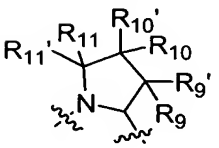
(C1-C12)-aliphatic-,

(C3-C10)-cycloalkyl- or -cycloalkenyl-,

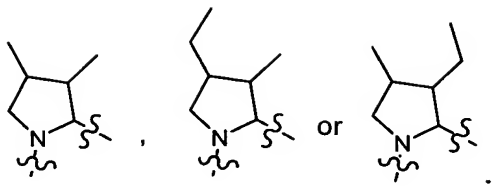
wherein up to 3 aliphatic carbon atoms in R_9, and $R_{10'}$ may be replaced by a heteroatom selected from O, NH, S, SO, or SO_2 in a chemically stable arrangement; and

wherein R_9, and $R_{10'}$ are independently and optionally substituted with up to 3 substituents independently selected from J.

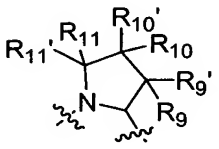
28. The compound according to claim 27, wherein the



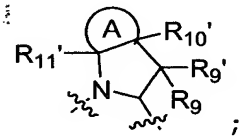
radical is:



29. The compound according to any one of claims 1-15, wherein the



radical is:



;

wherein;

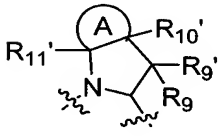
ring A is a 5- to 6-membered aromatic or a 3- to 7-membered non-aromatic ring system having up to 3 heteroatoms independently selected from N, NH, O, SO, or SO_2;

wherein said ring A is optionally fused to a (C6-C10)aryl, (C5-C10)heteroaryl, (C3-C10)cycloalkyl, or (C3-C10)heterocyclyl;

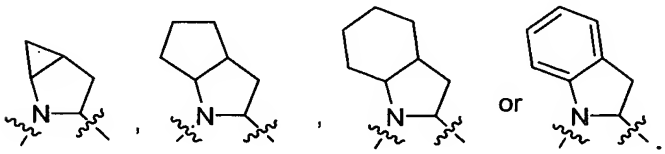
wherein any ring has up to 3 substituents selected independently from J; and

R_9, $R_{9'}$, $R_{10'}$, and $R_{11'}$ are as defined in claim 1.

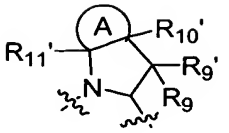
30. The compound according to claim 29, wherein the



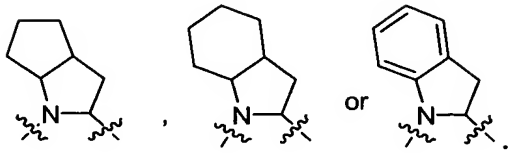
radical is:



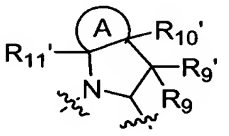
31. The compound according to claim 30, wherein the



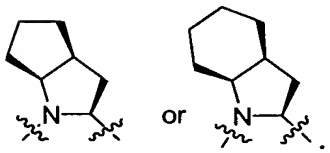
radical is:



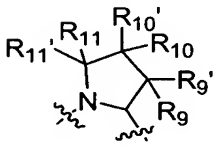
32. The compound according to claim 31, wherein the



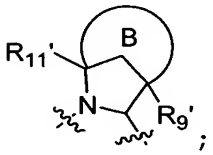
radical is:



33. The compound according to any one of claims 1-15, wherein the



radical is:



;

wherein:

ring B forms a 3- to a 20-membered carbocyclic or heterocyclic ring system;

wherein each ring B is either aromatic or nonaromatic;

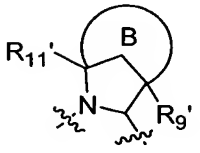
wherein each heteroatom in the heterocyclic ring system is N, NH, O, SO, or SO_2;

wherein ring B is optionally fused to a (C6-C10)aryl, (C5-C10)heteroaryl, (C3-C10)cycloalkyl, or (C3-C10)heterocyclyl;

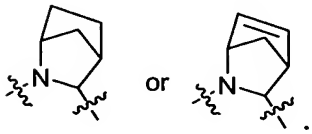
wherein each ring has up to 3 substituents selected independently from J; and

R_9, and R_{11}, are as defined in claim 1.

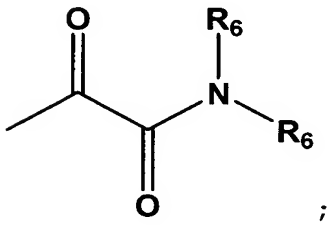
34. The compound according to claim 33, wherein the



radical is:



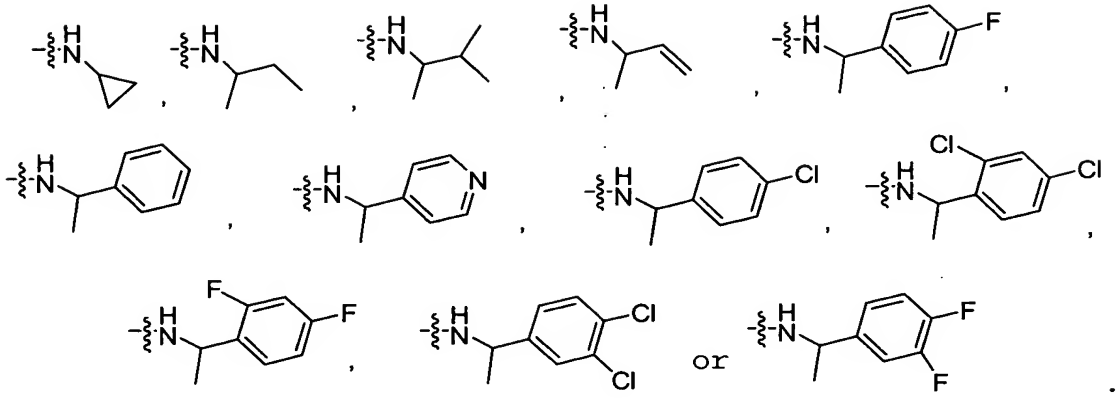
35. The compound according to any one of claims 1-34, wherein W is:



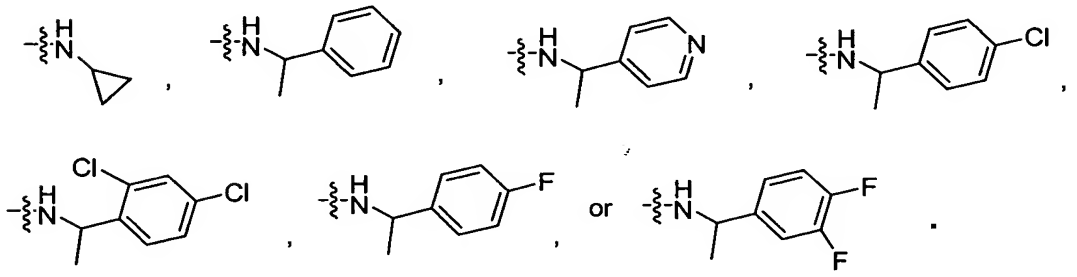
;

wherein in the W, the NR_6R_6 is selected from -NH-(C1-C6 aliphatic), -NH-(C3-C6 cycloalkyl), -NH-CH(CH_3)-aryl, or -NH-CH(CH_3)-heteroaryl, wherein said aryl or said heteroaryl is optionally substituted with up to 3 halogens.

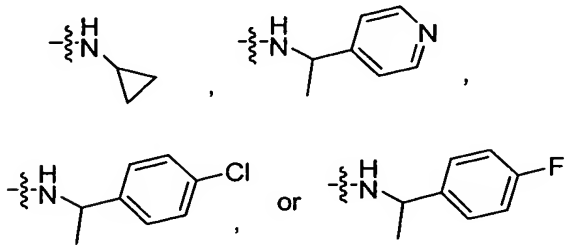
36. The compound according to claim 35, wherein in the W, the NR_6R_6 is:



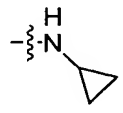
37. The compound according to claim 36, wherein in the W, the NR_6R_6 is:



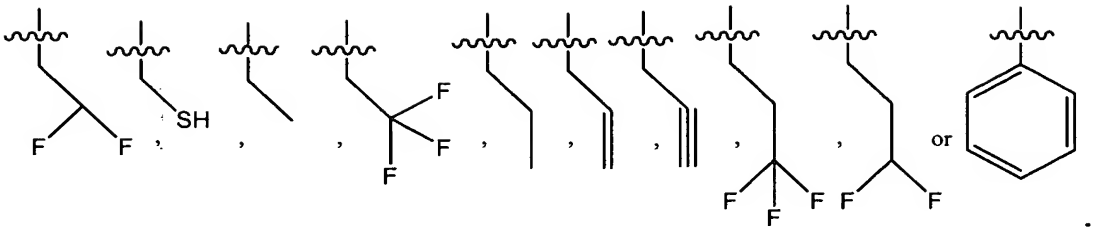
38. The compound according to claim 37, wherein in the W, the NR_6R_6 is:



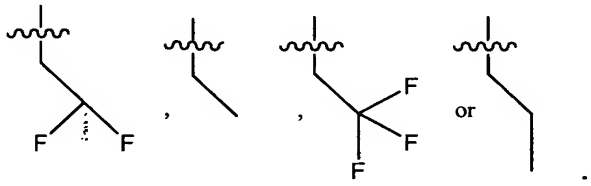
39. The compound according to claim 38, wherein in the W, the NR_6R_6 is:



40. The compound according to any one of claims 1-39, wherein R_5, is hydrogen and R_5 is:



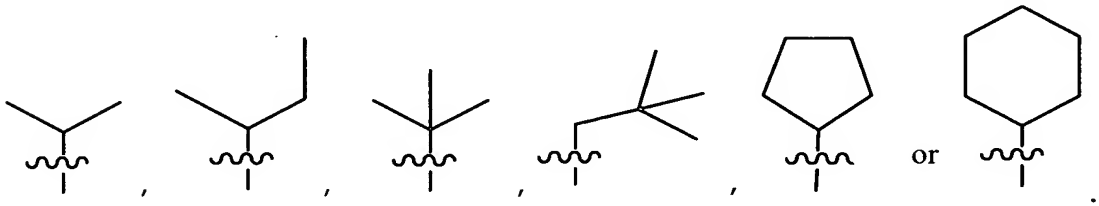
41. The compound according to claim 40, wherein R_5 is hydrogen and R_5 is:



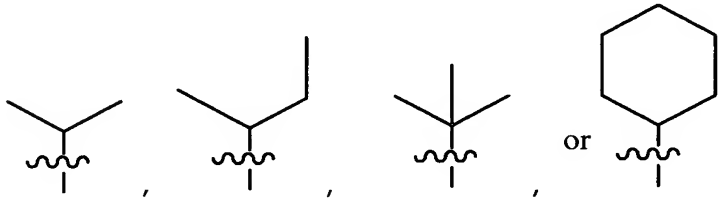
42. The compound according to any one of claims 1-41, wherein R_2, R_4, R_7, and R_{12}, are each independently H, methyl, ethyl, or propyl.

43. The compound according to claim 42, wherein R_2, R_4, R_7, and R_{12}, are each H.

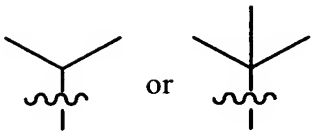
44. The compound according to any one of claims 1-43, wherein R_3 is:



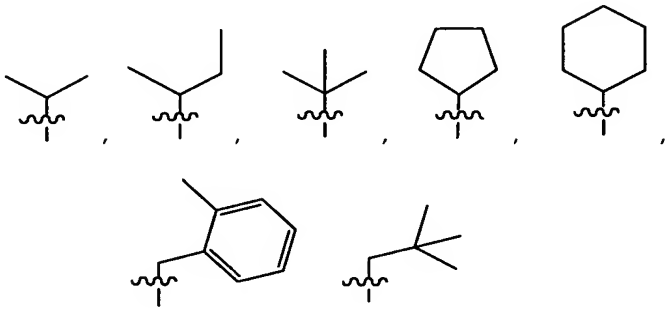
45. The compound according to claim 44, wherein R_3 is:



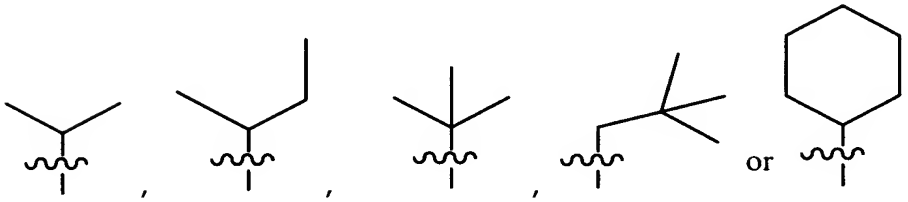
46. The compound according to claim 45, wherein R^3 is:



47. The compound according to any one of claims 1-46, wherein R^1 is:



48. The compound according to claim 47, wherein R_1 is:



49. The compound according to claim 48, wherein R_1 is cyclohexyl.

50. A pharmaceutical composition comprising a compound according to any one of claims 1-49 or a pharmaceutically acceptable salt thereof in an amount effective to inhibit a serine protease; and a acceptable carrier, adjuvant or vehicle.

51. The composition according to claim 50, wherein said composition is formulated for administration to a patient.

52. The composition according to claim 51, wherein said composition comprises an additional agent selected from an immunomodulatory agent; an antiviral agent; a second inhibitor of HCV protease; an inhibitor of another target in the HCV life cycle; and a cytochrome P-450 inhibitor; or combinations thereof.

53. The composition according to claim 50, wherein said immunomodulatory agent is α–, β–, or γ-interferon or thymosin; said antiviral agent is ribavirin, amantadine, or telbivudine; or said inhibitor of another target in the HCV life cycle is an inhibitor of HCV helicase, polymerase, or metalloprotease.

54. The composition according to claim 52, wherein said cytochrome P-450 inhibitor is ritonavir.

55. A method of inhibiting the activity of a serine protease comprising the step of contacting said serine protease with a compound according to any one of claims 1-49.

56. The method according to claim 55, wherein said serine protease is an HCV NS3 protease.

57. A method of treating an HCV infection in a patient comprising the step of administering to said patient a composition according to claim 51.

58. The method according to claim 57, comprising the additional step of administering to said patient an additional agent selected from an immunomodulatory agent; an antiviral agent; a second inhibitor of HCV protease; an inhibitor of another target in the HCV life cycle; or combinations thereof; wherein said additional agent is administered to said patient as part of said composition according to claim 51 or as a separate dosage form.

59. The method according to claim 58, wherein said immunomodulatory agent is α–, β–, or γ–interferon or thymosin; said antiviral agent is ribavarin or amantadine; or said inhibitor of another target in the HCV life cycle is an inhibitor of HCV helicase, polymerase, or metalloprotease.

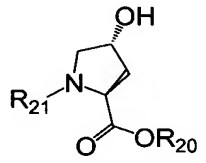
60. A method of eliminating or reducing HCV contamination of a biological sample or medical or laboratory equipment, comprising the step of contacting said biological sample or medical or laboratory equipment with a composition according to claim 50.

61. The method according to claim 60, wherein said sample or equipment is selected from blood, other body fluids, biological tissue, a surgical instrument, a surgical garment, a laboratory instrument, a laboratory garment, a blood or other body fluid collection apparatus; a blood or other body fluid storage material.

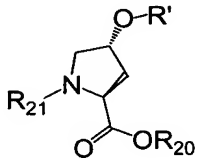
62. The method according to claim 61, wherein said body fluid is blood.

63. A process for preparing a compound of formula I, as defined in any one of claims 1-49, comprising the

step of: reacting a compound of formula VII in the presence of a compound of formula VIII to provide a compound of formula IX:



R'X



VII VIII IX

wherein:

R_{21} is an amine protecting group, a P3- residue of an HCV protease inhibitor described herein, or a P4-P3- residue of an HCV protease inhibitor as described herein, and wherein the P3 and the P4-P3 residues are optionally protected with an amino-terminal capping group;

R_{20} is a carboxy protecting group or a P1 residue of an HCV protease inhibitor described herein, wherein the P1 residue is optionally protected with a carboxy terminal protecting group or with W; R' is as defined in claim 1; and X is an appropriate leaving group.